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TECHNICAL ASSISTANCE TEAM FOR EMERGENCY RESPONSE REMOVAL AND PREVENTION
EPA CONTRACT 68-01-6669

Mr. Michael Strimbu, Chief
Waste Management Division
Emergency Response Section
U.S. Environmental Protection Agency
11th Floor
230 South Dearborn Avenue
Chicago, Illinois 60604

January 19, 1987

TAT-05-F-01255

Re: Site Assessment of the TaraCorp Facility
McCook, Illinois
TDD# 5-8701-18 (FY 87)
TDD# 5-8612-49 (FY 87)
TDD# 5-8610-63 (FY 86)
TDD# 5-8608-01 (FY 86)

Dear Mr. Strimbu:

The U.S. Environmental Protection Agency (U.S. EPA) tasked the Region V Technical Assistance Team (TAT) on August 6, 1986, to perform an inspection of the TaraCorp Industries' facility in McCook, Illinois. The findings and analytical results of samples collected by the TAT during the inspection are presented in this letter report.

The TAT conducted the site assessment of the TaraCorp property located at 7900 West 47th Street, McCook, Illinois, on August 28, 1986 (Figure 1). On August 6, 1986, the TAT was directed by Robert Bowden, U.S. EPA Region V Emergency Response Section Chief, to perform the site assessment after the U.S. EPA was notified by Emil T. Sergo, Mayor of McCook, of his concern about lead contamination at the site.

The McCook site is owned by TaraCorp Industries and was used to recycle lead-bearing scrap materials to produce metallic lead ingots. TaraCorp ceased lead reclamation operations at this facility in March 1984. The facility is presently being leased by Moreco Energy, Inc., which uses the property for maintenance and storage of waste oil tanker trucks.

Information about the history of the site was obtained from the Illinois Environmental Protection Agency (IEPA); most of the details were excerpted from a memo written by Cliff Gould,

EPA Region 5 Records Ctr.

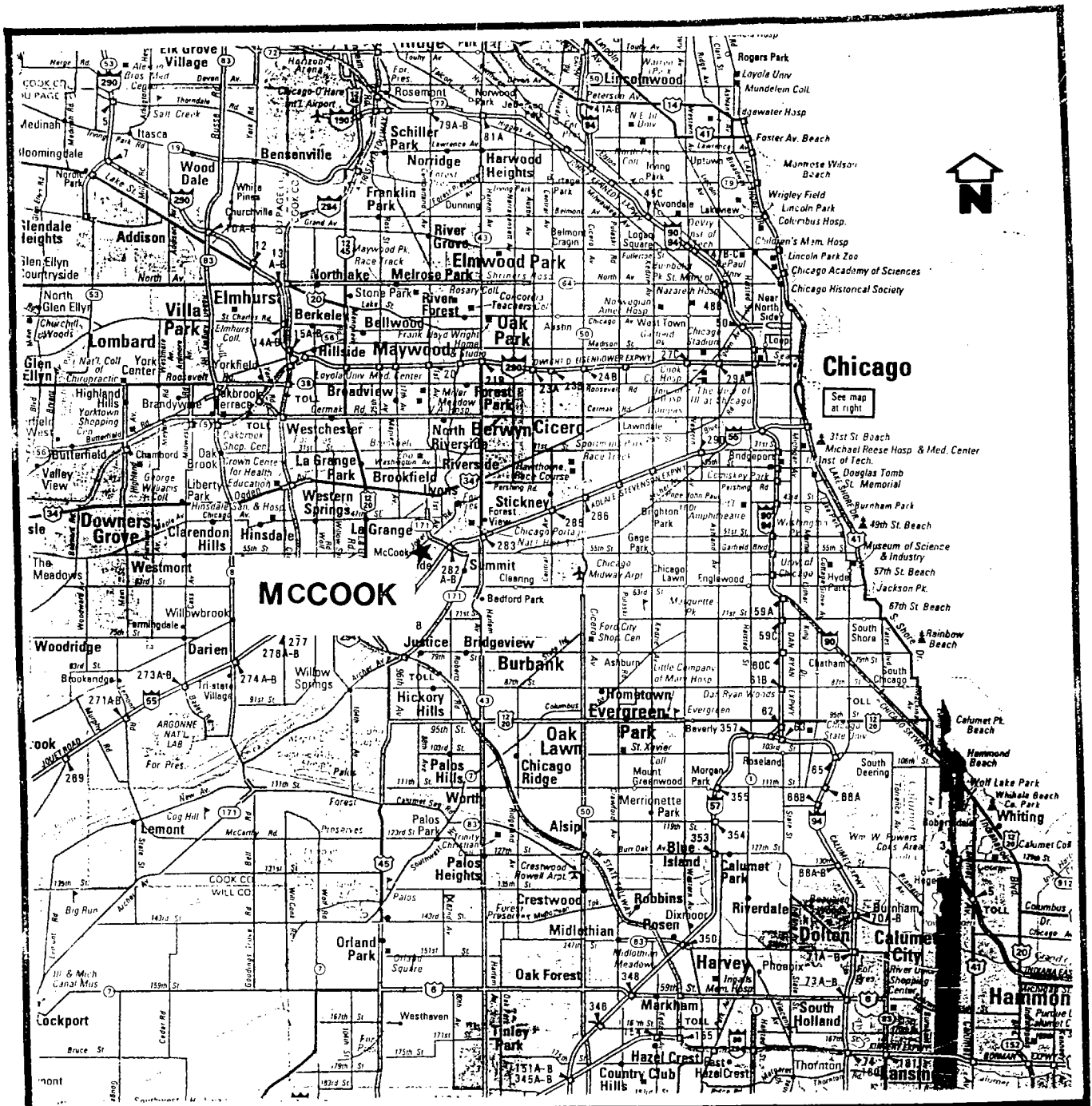


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Roy F. Weston, Inc.

SPILL PREVENTION & EMERGENCY RESPONSE DIVISION

In Association with ICF Inc., Jacobs Engineering Group Inc., C.C. Johnson & Associates, Inc., and Tetra Tech, Inc.,

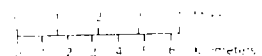


SOURCE: STATE OF ILLINOIS

FIGURE 1

SITE LOCATION MAP

SCALE



TARAC ORP, INC.

MCCOOK, ILLINOIS

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Acting Manager, IEPA Land Pollution Division, on February 25, 1986. The information from the memo included:

- o Three processes used by TaraCorp, Inc. for the secondary smelting of nonferrous metals (SIC 3341) were identified on the November 18, 1980, Part A RCRA form 3510-3 submitted to IEPA. These processes were: a reverberatory furnace that smelted lead bearing materials into metallic lead to be cast into ingots; a pot furnace (kettles) where materials were melted directly to produce lead ingots; and a waste pile where material was stored for later smelting.
- o Site visit observations on March 29, 1983, by Rico Vallipara of the IEPA Division of Air Pollution Control, indicated that flue dust and dross comprised the bulk of raw material in the storage area. Notes by Mr. Vallipara also indicated that contaminated water may run off the storage area during a rain if the wind was from the south or west, the exposed sides of the storage areas. The storage pad was also broken in many places.
- o During a site visit on May 26, 1983, Lynn Crivello of the IEPA Division of Land Pollution Control, collected two samples. Lead levels of 412,250 ppm were detected in dust on the concrete near a Metropolitan Sanitation District (MSD) storm drain, and 12.71 ppm lead was detected in a sample from the ponded water on the storage pad.
- o Approximately 20,000 pounds of flue dust and dross was delivered weekly from a plant in Granite City, Illinois to the TaraCorp facility in McCook, Illinois, and stored in a concrete pad storage area. The flue dust and dross was used as raw material for secondary smelting processes. The waste pile was operated until the suspension of production operations in early 1984. The remaining waste pile material was manifested and shipped to other secondary lead smelters in May 1984.

To date, TaraCorp has not submitted an approved closure plan for the McCook facility. The IEPA requested assistance from the U.S. EPA in April 1986 for enforcement of RCRA violations at the TaraCorp facility. The U.S. EPA issued TaraCorp a compliance order on August 1, 1986, for closure of the facility.

The site assessment was performed by TAT members William Scoville, Susan Lorenz, Sinnadurai Babusukumar, and Gene Foster. The TAT arrived at the McCook TaraCorp site on August 28, 1986, and met with George Webb of TaraCorp Industries and Ronald Stoker of Moreco Energies, Inc., to discuss the proposed site assessment activities. During a discussion about the sampling strategy, Mr. Webb requested that the TAT split samples as well as supply him with sample jars. The TAT informed Mr. Webb that sample splitting would not be possible because he had not notified the U.S. EPA or the TAT 24 hours in advance of the site inspection, although analytical data would be available to him through the U.S. EPA if he requested it. Messrs. Webb and Stoker also requested that they be present during the site inspection and sampling, which was agreed upon.

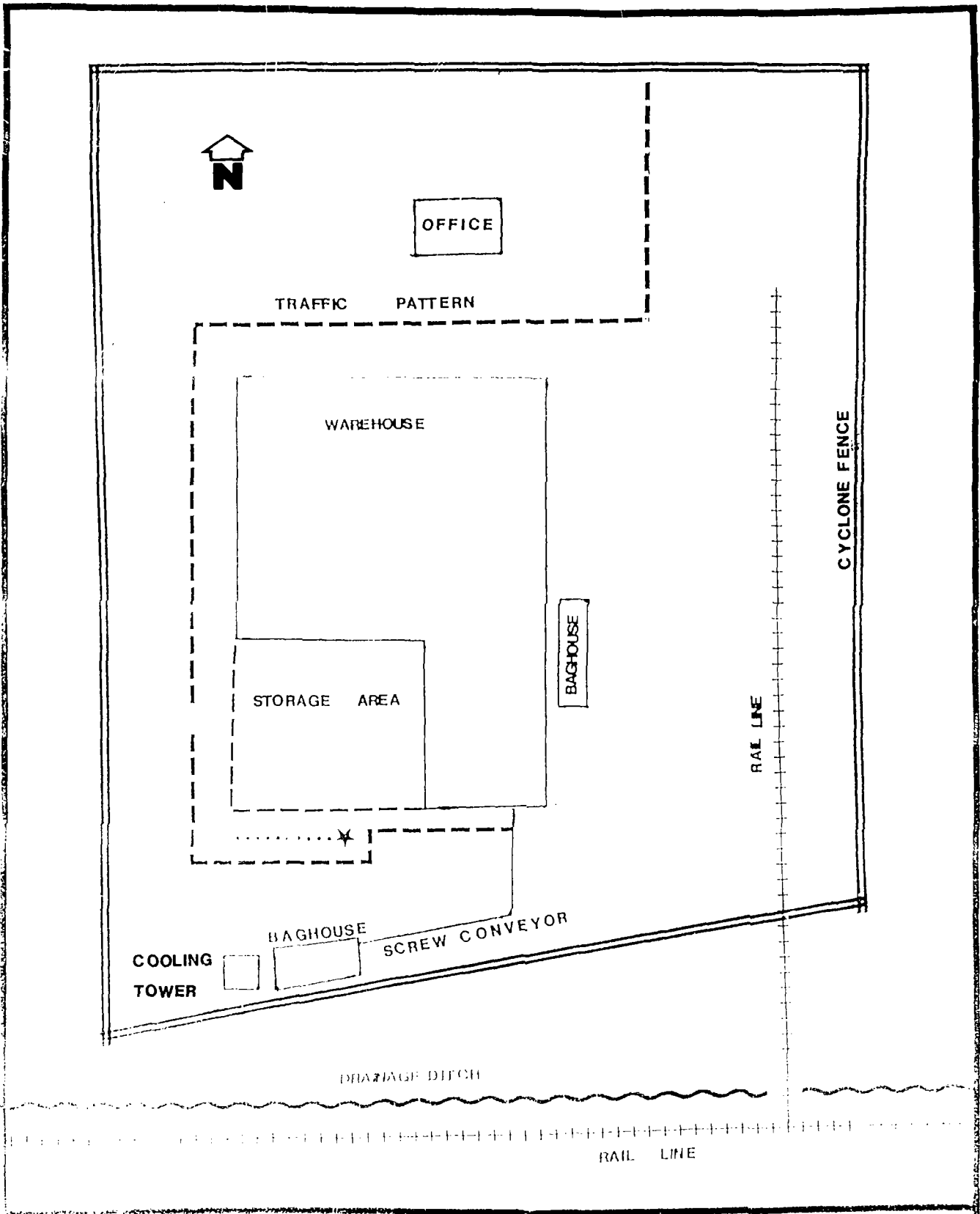
After the meeting adjourned, the TAT donned level C protection for site entry. Walter Francis of the U.S. EPA RCRA arrived at the site to join the site inspection team. Messrs. Francis, Webb, and Stoker with the TAT entered the site. TAT member Foster performed an inspection of the site perimeter.

The site borders were enclosed by an eight-foot high cyclone fence with salvage yards adjacent to the property on the east and west borders. The southern perimeter is bordered by railroad tracks with a drainage ditch flowing between the railroad tracks and the fenced perimeter. The drainage ditch discharges into the Des Plaines River approximately 1/2 mile from the site. A vacant lot is located between the northern perimeter of the site and 47th Street (Figure 2).

The TaraCorp facility was composed of an office, a warehouse, a storage pad, two baghouses, a cooling tower, a screw conveyor, and a rail spur. Moreco Energies, Inc., used the office and warehouse for maintenance and storage of waste oil tankers. It did not appear that any of the other structures were in use.

Observations made during the site inspection include:

- o The concrete pad used for storing lead contaminated material measured approximately 85 feet x 75 feet and was covered by a roof. Walls protected the area on the north and east sides, but no walls were present on the south and west sides (Photograph 1). The concrete on the storage pad was cracked. Dust was also found on the storage pad.



SITE MAP

FIGURE 2

TARACORP, INC.

MCCOOK, ILLINOIS

LEGEND

★ METROPOLITAN
SEWER DRAIN

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NOT TO SCALE

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- o A storm sewer drain near the storage pad was plugged and standing water was observed along the storm grate leading to the storm sewer.
- o Broken pieces of battery casings were found on the ground on the east side of the site (Photograph 10).
- o A drainage ditch flowed within a few feet of the south perimeter of the facility (Photograph 7).
- o No defined drainage patterns were detected leaving the site, but the property sloped towards the south and east, which was also the direction of the drainage ditch.
- o Vegetation in the ditches along the site borders did not exhibit signs of stress (Photograph 7).

Soil samples were collected at locations listed in Table 1 and shown in Figure 3 and analyzed for total metals. Samples S01 and S04 were also analyzed for EP toxicity metals.

Soil samples were collected with a stainless-steel spatula that was decontaminated with acetone and a water rinse between sampling points. Samples S01 and S02 from the storage pad were collected as composite samples with a stainless-steel spatula and mixed in a stainless-steel mixing bowl. All other samples were collected as grab samples. Sample S12 was a field blank obtained by decontaminating the stainless-steel spatula as described above, and then pouring water over the spatula and collecting the rinsate in a sample jar for analysis.

Samples S01, S02, S03 were classified as high hazard samples and were analyzed at Versar, Inc., Springfield, Virginia. All other samples were classified as medium hazard samples and were analyzed at Rocky Mountain Analytical Laboratories, Arvada, Colorado.

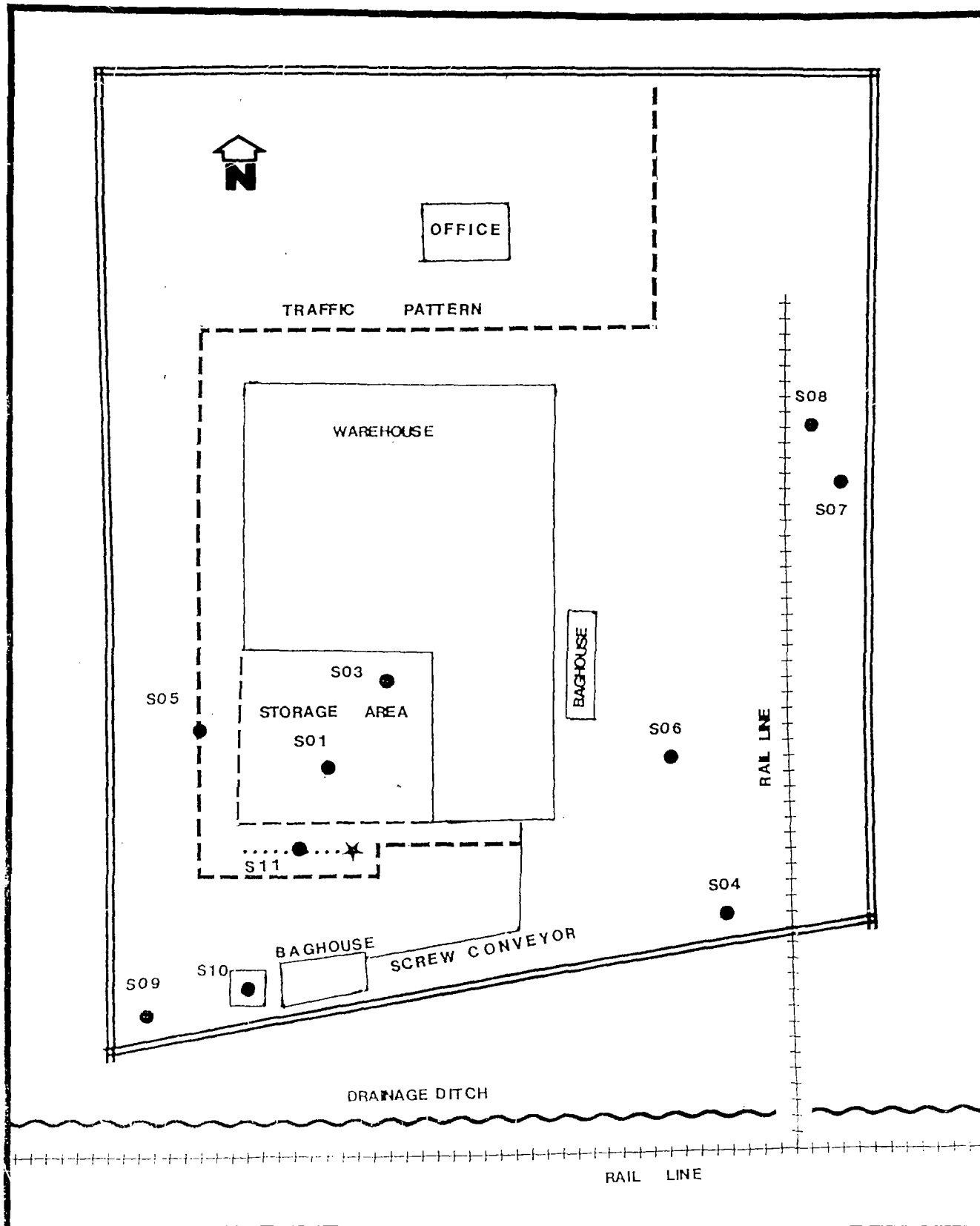
The Analytical results summarized in Table 2 indicate that the maximum levels of 12 elements exceeded the upper limit of the range for these elements in typical soils: the maximum levels for chromium, magnesium, and nickel were detected at levels less than 10 times the upper limit; the maximum levels for arsenic, copper, mercury, selenium, silver, and zinc were in a range between 10 times and 100 times the upper limit for typical soils; the maximum levels for antimony and cadmium were in a range between 100 times and 1000 times the upper limit for typical soils; and lead was detected at levels greater than 1000 times the upper



TABLE 1

SAMPLING NUMBERING SYSTEM
TARACORP, INC., MC COOK, ILLINOIS

<u>Sample #</u>	<u>Sample Medium</u>	<u>Area Description</u>
S02	Soil	Storage pad
S02	Soil	Duplicate of S01
S03	Soil	Cracks in storage pad
S04	Soil	Area SE corner of site
S05	Soil	Traffic way west of storage pad
S06	Soil	Area of broken battery casings east of warehouse
S07	Soil	Low area near fence along east border
S08	Soil	Area of broken battery casings near railroad spur
S09	Soil	Area at SW corner of property
S10	Water	Cooling tower
S11	Water	Storm grate south of pad
S12	Water	Method blank



SAMPLE LOCATION MAP

FIGURE 3

TARACORP, INC.

MCCOOK, ILLINOIS

NOT TO SCALE

LEGEND

● SAMPLES

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TABLE 2

SOIL SAMPLE ANALYTICAL DATA
TOTAL METALS ANALYSIS
TARACORP, INC., MC COOK, ILLINOIS
(Concentrations in mg/kg)

	Range of Typical Element Conc. in Natural Soils	S01	S02	S03	S04	S05	S06	S07	S08	S-09
Aluminum	100,000-300,000	10400	11700	7450	4650	742	2930	7430	2930	7780
Antimony	2-10	9840	7920	10600	5140	5330	5360	1340	4070	775
Arsenic	1-50	3330	3230	3330	1550	1890	857	615	1220	277
Barium	100-3000	598	391	268	331	261	649	253	424	201
Beryllium	0.1-40	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	0.01-0.7	541	527	227	148	120	83	48	16	37
Calcium	---	16000	25400	107000	*18300	*8060	*11300	*37000	*5570	*168000
Chromium	1-1000	240	107	29	39	6.9	26	54	25	3350
Cobalt	1-40	ND	ND	ND	6.7	ND	6	17	11	8.5
Copper	2-100	*8450	*5710	*1510	717	709	868	475	322	310
Iron	---	*10500	*13100	*10100	19900	6260	25300	25100	33500	44100
Lead	2-200	536000	450000	138000	289000	278000	500000	61500	641000	30000
Magnesium	600-6000	3540	8380	35700	*10100	*4170	*5210	*17000	*2670	*23900
Manganese	20-3000	128	195	308	DU	DU	DU	DU	DU	DU
Mercury	0.01-0.3	1.7	2.7	0.34	7.0	2.2	6.4	2.7	1.3	10
Molybdenum	0.2-5	ND	ND	ND	---	---	---	---	---	---
Nickel	5-500	1080	648	183	62	50	59	109	52	48
Selenium	0.1-2	22.4	ND	ND	DU	DU	DU	DU	DU	DU
Silicon	---	30700	31400	61500	---	---	---	---	---	---
Silver	0.01-5	ND	ND	ND	8.4	6.5	7.2	76	11	ND
Sodium	---	ND	ND	ND	ND	ND	ND	ND	ND	2440
Thallium	---	ND	ND	ND	18	ND	ND	ND	ND	ND
Tin	2-200	---	---	---	DU	DU	DU	DU	DU	DU
Titanium	---	471	539	ND	---	---	---	---	---	---
Vanadium	20-500	ND	ND	ND	8.2	ND	5.1	20	7.1	25
Zinc	10-300	3100	2280	2260	2150	584	1290	4150	752	5210

ND - Indicates element was analyzed for but not detected.

* - Estimated value.

DU - Data Unuseable.

limit for typical soils. The sample from the area of broken battery casings near the railroad spur (S08) contained the highest lead level at the site (68%).

Of the elements that exceeded the upper limit of typical soils, arsenic, cadmium, copper, magnesium, mercury, and silver are known to be toxic to human health and the environment.

Samples analyzed for EP toxicity exceeded the maximum concentration of contaminants for the characteristic of EP toxicity for lead and cadmium at sample station S01 and for lead at sample station S04 (Table 3). These soils exhibit a characteristic of EP toxicity and are, therefore, considered a hazardous waste according to the CFR Title 40 Chapter 1 Section 261.24.

Analytical results from the water samples are included in Table 2. Lead, the only metal found at significant levels above naturally occurring background levels for rivers, was detected at 62 ppm in sample S11 (Table 4).

The field blank (S12) analytical results detected trace amounts of copper (0.04 ppm), lead (0.03 ppm), and zinc (0.05 ppm) (Table 3). No significant levels of heavy metals in the field blank indicate that the decontamination procedures were appropriate and successful. They also indicated that there was no cross contamination between sample stations.

Based on site observations by the TAT and analytical results from the samples collected, the TaraCorp facility was found to pose the following actual and potential threats to human health and the environment as delineated within Section 300.65(b)(2) of the National Contingency Plan:

- o Actual or potential exposure to hazardous substances or pollutants or contaminants by nearby populations, animals, or food chain;
- o High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface, that may migrate;
- o Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released.

An immediate threat to the general population is low due to the inaccessibility of the site. However, metal concentrations in the soil pose a health risk to workers on site not utilizing

TABLE 3

EP TOX ANALYTICAL DATA
TARACORP, INC., MC COOK, ILLINOIS
(Concentrations in mg/l)

<u>Metal</u>	<u>S01</u>	<u>S04</u>	<u>Maximum Concentration for EP Toxicity</u>
Arsenic	0.097	*0.020	5.0
Barium	ND	0.067	100.0
Cadmium	5.66	0.651	1.0
Chromium	ND	ND	5.0
Lead	1,290	500	5.0
Mercury	ND	ND	0.2
Selenium	ND	DU	1.0
Silver	ND	ND	5.0

ND - Indicates element was analyzed for but not detected.

* - Estimated value.

DU - Data unuseable.

TABLE 4

WATER SAMPLE ANALYTICAL DATA
TOTAL METALS ANALYSIS
TARACORP, MC COOK, ILLINOIS
(Concentrations in mg/l)

	<u>S10</u>	<u>S11</u>	<u>S12</u>
Aluminum	ND	1.6	ND
Antimony	ND	1.640	ND
Arsenic	ND	0.320	ND
Barium	0.026	0.140	ND
Beryllium	ND	ND	ND
Cadmium	ND	0.467	ND
Calcium	*51.8	*69.6	*0.56
Chromium	ND	ND	ND
Cobalt	ND	ND	ND
Copper	0.048	.366	0.038
Iron	0.148	6.43	ND
Lead	0.09	62.0	0.034
Magnesium	9.81	14.2	ND
Manganese	ND	0.117	ND
Mercury	ND	ND	ND
Nickel	ND	0.043	ND
Selenium	ND	ND	ND
Silver	ND	ND	ND
Sodium	ND	9.46	ND
Thallium	ND	ND	ND
Tin	ND	0.332	ND
Vanadium	ND	ND	ND
Zinc	0.072	1.25	0.046

ND - Indicates element was analyzed for but not detected.

* - Estimated value.

proper respiratory protection. There also exists the potential for migration of pollutants off site through wind and water erosion.

The soil sample (S05) from the traffic way had a lead concentration of 27.8% and arsenic concentration of 1,890 ppm. There exists the potential for migration of contaminants off site from vehicular traffic.

If there is sufficient water erosion from run-off during storm events, the aquatic life in the area could be adversely impacted. There is minimal threat to drinking water supplies due to the fact that the City of McCook obtains their drinking water from the City of Chicago.

Studies have shown observable increases in blood lead levels occur at soil-dust exposures of 500-1,000 ppm. A 3-6% increase in mean blood levels has been seen for a two-fold increase in soil lead levels. Thus, a significant risk to human life and health exists on the TaraCorp property where concentrations of lead were determined at 67,500 ppm. Inhalation is the worst type of direct exposure due to the body's ability to directly absorb the lead into the bloodstream via the lungs. Also, lead-contaminated particles can become trapped in the mucous membranes and be ingested.

Environmental exposure through respiration or ingestion can result in 10-15% absorption of the lead ingested in adults and up to 50% absorption of lead ingested by children. This absorption of lead can cause toxic effects in humans at low blood levels. Adverse health effects include: blood system dysfunction, psycho-neurologic dysfunctions, kidney dysfunctions and reproductive impairment. Anemia is considered to be the most toxic effect of low level lead poisoning. Children are most susceptible to psycho-neurological disorders and research has indicated blood levels as low as 0.5-0.6 mg/l can cause significant effects. Kidney diseases have been reported in industrial workers exposed to lead and older adults exposed to lead as children. Lead exposure has also been associated with increased rates of stillbirth, miscarriage, and premature delivery.

In order to minimize the threats posed by the lead contamination at the TaraCorp site, the TAT recommends the following be implemented:

- o Vehicular traffic be curtailed or vehicles be decontaminated before exiting the site;



Mr. Michael Strimbu

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- o Employees in the area should don appropriate respiratory protection and decontaminate footwear and clothing prior to exiting the site;
- o Additional soil samples should be collected from the area to define the extent of contamination;
- o Sediment samples and water samples should be taken from the drainage ditch that flows along the southern border of the site to determine if there is pollutant migration off site;
- o Appropriate RCRA regulations should be enforced for proper closure of the facility.

Should you have any questions or require additional information, please feel free to contact us.

Very truly yours,

ROY F. WESTON, INC.

A handwritten signature in cursive script, appearing to read "E. Foster".

For Eugene Foster
Environmental Scientist

A handwritten signature in cursive script, appearing to read "Sally Matz".

For Scott Springer
Technical Assistance Team
Leader, Region V

EF:ap

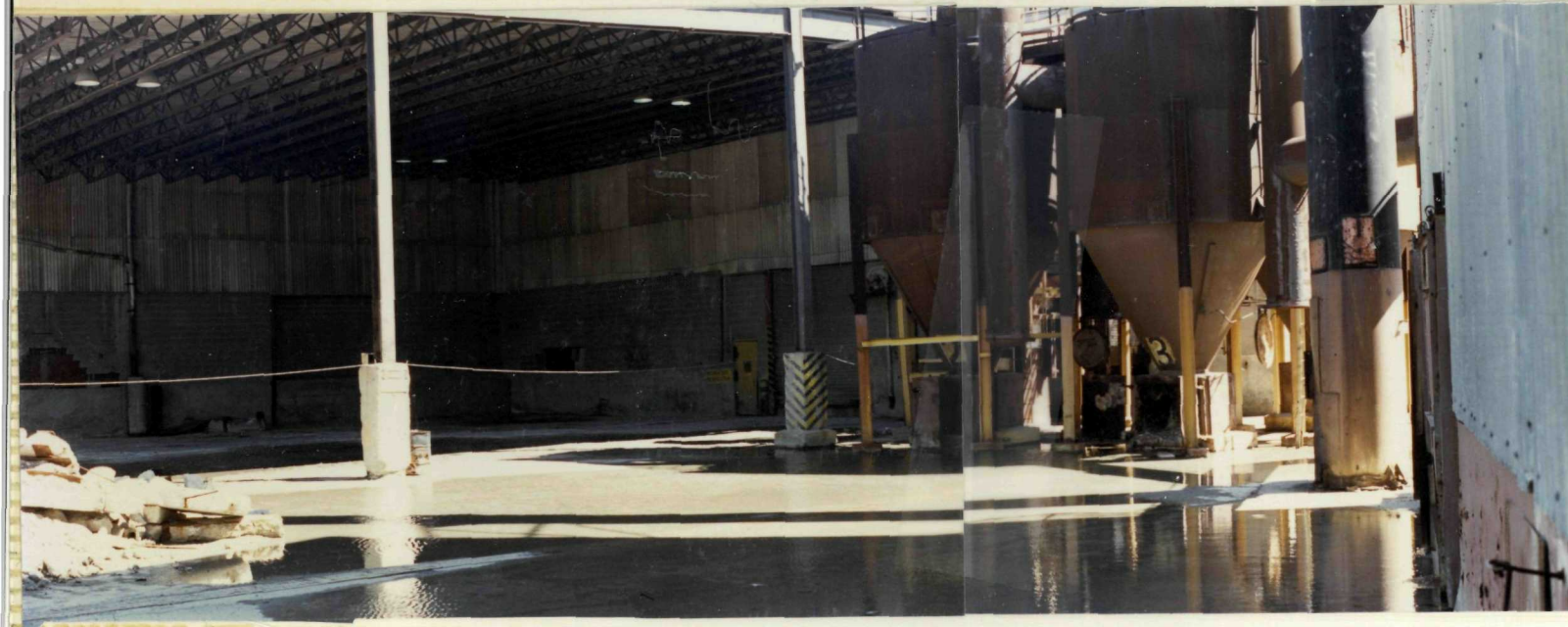
Enclosure

ATTACHMENT A

Photographs
Taracorp Industries Site
McCook, Illinois
August 1986



PANORAMA 1:
 TARACORP,
 McCook, IL.
 Concrete pad
 composite
 sample area.
 Driveway in
 the lower
 left photo
 heads north
 out of the
 site. The
 loading bays
 in the upper
 right photo
 lead due
 east towards
 the furnaces.
 (Photo by
 Scoville,
 1030-1230,
 8/28/86.) *msd*



PANORAMA 2:
TARACORP, McCook,
IL.
Samples were
collected of the
water in the puddle
in the lower series
of photos and the
water in the cooling
tower in the upper
right photo. A
clogged drainage
grate leads out of
the puddle in the
lower left photo.
(Photo by Scoville,
1030-1230, 8/28/86.)

LMJ



PHOTOGRAPH 3: TARACORP, McCook, IL.
TAT members Lorenz and Babusukumar prepare a composite sample of the concrete pad shown in Panorama 1. Mr. Ron Stoker of Moreco Energy, Inc., observes as George Webb of Taracorp and Walter Francis from the U.S. EPA peer into the interior of the building. Note the sign on the wall advising the use of respirators.
(Photo by Scoville, 1030-1230, 8/28/86.) *ZAS*



PHOTOGRAPH 4: TARACORP, McCook, IL.
TAT member Lorenz samples a high traffic area west of the concrete pad on the driveway. Caution sign indicates that the area is restricted due to the storage of hazardous wastes.
(Photo by Scoville, 1030-1230, 8/28/86.) *ZAS*



PHOTOGRAPH 5: TARACORP, McCook, IL.
TAT member Babusukumar walks southwest towards a manhole cover near the cooling tower. A soil sample was collected in the southwest corner of the Taracorp property near a drainage ditch.
(Photo by Scoville, 1030-1230, 8/28/86.) *MS*



PHOTOGRAPH 6: TARACORP, McCook, IL.
Most of the cooling tower had been demolished. The water in the area on the other side of the wood panels was approximately 3 feet deep. East of the cooling tower was the bag room, which is shown on the left side of the photo.
(Photo by Scoville, 1030-1230, 8/28/86.) *MS*

PHOTOGRAPH 7: TARACORP, McCook, IL.
The tall vegetation in the ditches
that drained the property did not
show any indications of being
stressed. The pipe shown in this
photo was not connected. A water
line for fire hydrants was buried
on the other side of the fence.
(Photo by Scoville, 1030-1230,
8/28/86.) *ZMS*



PHOTOGRAPH 8: TARACORP, McCook, IL.
TAT member Lorenz samples an area east of the bag
room and cyclones along the south border of the
property.
(Photo by Scoville, 1030-1230, 8/28/86.) *ZMS*



PHOTOGRAPH 9: TARACORP, McCook, IL.

A Moreco Energy truck entered the property as the TAT was sampling. Moreco rented the property from Taracorp for use as a maintenance yard. A train siding entered the property to the right (east) of the ramp. Parts of battery casings and battery posts were found scattered in this area as well as near the cooling towers.

(Photo by Scoville, 1030-1230, 8/28/86.) *ZRS*



PHOTOGRAPH 10: TARACORP, McCook, IL.

TAT member Lorenz samples the soil where battery parts were found. The TAT estimated that 20 to 40 cubic yards of battery debris lined the railroad siding.

(Photo by Scoville, 1030-1230, 8/28/86.) *ZRS*